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APPRAISAL OF THE IMPACT OF COST CONTROL MEASURES OF CAPITAL PROJECTS ON THE NIGERIAN ECONOMY

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Abstract

This study appraised the impact of cost control measures of capital projects on the Nigerian economy. Cost Control is the process of checking, verifying, regulating and monitoring the cost of a project from inception stage to completion stage within the client's budget. The increasing economic hardship and the alarming increase cost of capital projects, coupled with the high number of uncompleted capital projects over the years in Nigeria has been a cause of serious concern especially as it has not encouraged savings from government and private investors. The study adopted a descriptive survey design and questionnaires were used for data collection. The data collected were analysed using frequency distribution, and Relative Important Index statistical tool. The findings showed that capital projects costs are not effectively controlled which most time led to cost overrun. Predictive and Preventive measures are the most effective cost control measures of capital project. Furthermore, the study also revealed that the effect of effectively utilization of cost control measures is to gain the maximum profit within the designated period and within budget. The study recommended that, to avoid exceeding budgeted cost, disputes and abandonment of capital project, the contractor should Implement a robust monitoring and reporting systems to track project costs in real-time.

Keywords: Cost Control. Capital Projects, Inception Stage, Budgeted Cost, Cost Control Measures

Introduction

The growing need for construction especially capital projects, coupled with a tight monetary supply has provided the construction industry with a big challenge to cut cost. The total cost of construction works in normal circumstances is expected to be the sum of the following cost: Materials, Labour, Site Overheads, Equipment/Plant, Head office Cost and Profit but in many parts of the world particularly in Nigeria, there are other costs to be allowed for (Aziz, Memon, Rahman, & Karim,2013).

These costs according to (Adjei, Aigbavboa & Thwala, 2017), have obvious negative implications for the key stakeholders in particular, and the industry in general. To the client, high cost implies added costs over and above those initially agreed upon at the onset, resulting in less returns on investment. To the end user, the added costs are passed on as higher rental / lease costs or prices. To the consultants, it means inability to deliver value - for - money and could tarnish their reputation and result in loss of confidence reposed in them by clients. To the contractor, it implies loss of profit through penalties for non-completion, and negative word of mouth that could jeopardize his/her chances of winning further jobs, if at fault.

Now Considering the present situation of Nigeria, with the fall in Naira and drastic rise in dollar which has affected the cost of projects, and in the wake of the global economic recession, which is hitting hard on the world economy, developers and independent builders in Nigeria are becoming unsettled with the development, and are therefore calling for the intervention of government (Adebayo, et al., 2018 and Evangeline 2022). Although the economic crisis has created enormous challenges for construction companies, as the economic time demanded that companies make the right management decision if there are to survive, also emerging companies are under increasing pressure to scrutinize all parts of the construction project processes to identify new areas of efficiency. Strategy cost control measures will therefore become a tool to look unto as a competitive tool for the survival of the construction industries in this recession times (Nze & Nnadi 2025).

The increasing economic hardship and the increasingly alarming cost of capital projects coupled with the high number of uncompleted capital projects over the years in Nigeria has been a cause of serious concern especially as it has not encouraged savings from government and private investors. The constant contract initiation and its constant lack of effective execution have regrettably had its toll on the economic development of Nigeria. These large numbers of uncompleted projects have also hindered prospective investors in all sectors of the economy. Thus, the need to know the impact of cost control measures on capital projects which ensures that these capital projects are not left uncompleted, thus having a positive effect on the Nigerian economy as construction sector has a great contribution to the Nation's Gross Domestic Product (GDP).

Aim and Objectives of the Study

The aim of this study is to evaluate the impact of cost control measures of capital projects on the Nigerian economy. To achieve the stated aim, it is targeted on the following objectives;

1. To identify different cost control measures of capital projects
2. To identify the effect of effectively utilization of cost control measures in the era of economic recession
3. To Evaluate the economic importance of cost control of capital projects in Nigerian economy
4. To recommend ways of improving capital project execution in Nigeria for utmost cost performance.

Literature Review

Concept of Cost

The term "cost" is ambiguous since it has several different meanings to different persons. To a financial or cost accountant, it means the main elements which go to make a product, hence basically classifying cost into material, labour and equipment cost. Adebayo et al., (2018) defined cost as "the cost of producing a certain output of a commodity. It is the sum of all the payments to the factors of production engaged on the production of that commodity".

According to Genie (2024), construction cost is the entire expense involved in the execution of a project. This includes supervision, materials, supplies, labour, tools, equipments, transportation, and other facilities provided or utilized. Panigrahi (2024) highlighted that, the management of an organization needs necessary data to analyze and classify costs for proper control and for taking decisions for future course of action.

Hence the total cost is analyzed by elements of costs e.g. by the nature of expenses. Figure 1.1 illustrate the elements of costs in three dimensions which includes materials, labour and other expenses. These can be further analyzed as follows:

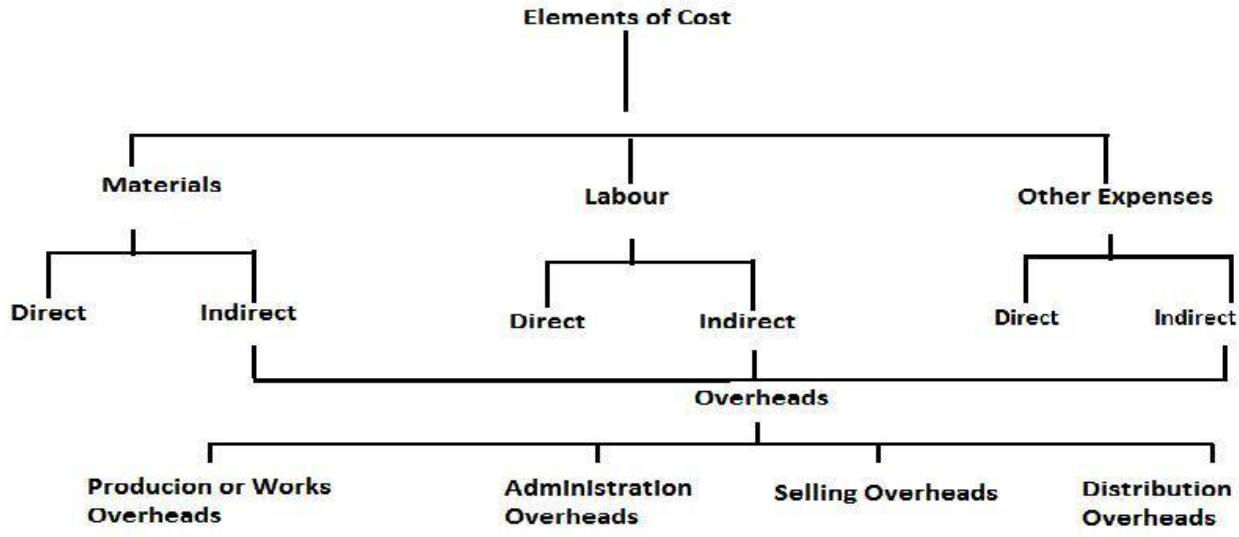

Figure: 1.1: Elements of cost

Cost Control

Control is defined as to check, verify or regulate or monitor the cost of a project from inception stage to completion stage within the client's budget. Cost control is the process of monitoring, analysing and managing project costs to ensure that they stay within the defined budget. The main objectives of monitoring and analysing are to ensure that the overall period of completing a project is not exceeded and this is achieved at the minimum cost (Adei et al., 2017).

Materials Cost Control

The prime purpose of material costing is to ensure that purchases do not exceed the planned distribution of budgeted expenditure for the project. As reported by Ibrionke, (2004), the building establishment defines material control as covering realistic design, specification and procurement of good, their packaging, handling, storage and protection after fixing. The procurement of material is based on the material schedule already prepared during pre-contract planning so that any shortfall or excess can easily be determined during the project execution. Recovering report form, purchase order, material (store) requisition form are typical standard documents needed for material monitoring and control. Other important documents are invoices, delivery notes, advice notes, among others. All these are to ensure good financial discipline and proper material cost control, (Akinradewo and Aigbavboa 2019)

Labour Cost Control

This involves the use of labour time and cost reports. Labour time card reports the hours of time for every trade man and the project cost codes to which the labour is applied. Also, the foreman or supervisor should record the hours spent by site labour. The total gross payroll can then be debited

to a labour variance account on a weekly basis and the weekly summary of man hours spent on each activity can be used to debit the labour cost to each activity account. The total of these debits can then be credited to the labour variance account. This man-hour has a dual purpose in placing the proper perspective on labour costing both for project control and for future estimating, (Aziz et al., 2013).

Equipment (Plant) Cost Control

Since equipment costs are usually expressed as a time rate of expense, time reporting is an important step in equipment cost reporting (Udoh, 2004). The procedure for the preparation of equipment cost report is similar to that of labour. Equipment costs are matched with the corresponding quantities of work produced. The reports tend to summarize all equipment cost incurred on the project up to the effective date of the report. It helps to compare the estimated (as in plant schedule) with the actual equipment unit cost for each type of work, (Akinradewo and Aigbavboa, 2019).

Cost Control Measures of Capital Project

Cost control aim at reducing inefficiencies and wastages and setting up predetermined cost and in achieving them. Cost control is exercised through setting standards, norms or targets and comparing actual performance with a view to ascertaining deviations from set targets, norms or standards and taking corrective actions to ensure that future performance conform to the set standards, norms or target. Kokate, (2018).

A critical investigation of some cost control measures revealed that they can be categorized according to the broad functions they perform leading to the development of the following classification

- Preventive Measures These are precautionary measures that are put in place as a defense to the inhibiting factors. Most of these measures are active measures that would be put in place during the planning stage of a project. For example a preventive measure against the problem of design changes during cost and time of projects is to ensure that the project is designed to a great detail at the outset while a preventive measure for risk and uncertainty is to properly identify the project risks before the project starts and devise a strategy for managing them should they come to fruition, (Odediran et al., 2010).
- Predictive Measures: These may seem similar to preventive measures but they are not the same. Predictive measures are put in place in order to spot potential problems to the control process in the future so that they can be stopped from happening or be prepared for them should they happen. Most of these measures actually utilize some tools or techniques to look into the current situation in a bid to spot potential future problems. For example using a 4D modeling (3D plus time dimension) to test how the plan (programme) will work out is a predictive measure that could be used for the mitigation of complexity of works (Olawale and Sun, 2010).
- Corrective Measure: These are measures that are utilized to mitigate the effect of the project control inhibiting factors by acting as a remedy. These measures are reactive measures that only act after the event. They may not be

as effective as preventive or predictive measures but they aim to bring the Cite as: Olawale and Sun, (2010

- Organizational Measures: This measures generally encompass practices that go wider than the actual control process but have an effect on project control; they are normally in place because of the company's belief, orientation, management style or philosophy, they have a tendency of not being specific to one project but would normally affect all projects being undertaken by the company as they reflect how the wider organization works.(Aziz, et al., 2013).
- Cost Monitoring and Control System: Controlling and monitoring of projects occurs when you establish ways to track the course of all activities and events in the project. As project is always a dynamic entity since it must respond to changing conditions if it is to be completed successfully. It is carried out in an environment of ceaseless change and there is a continual need for re - assessment and re-appraisal of the project plan (Adebayo et al., 2018). Among the factors liable to alter the course of a project includes such changes in: The technical specification of the project.
- Budget Monitoring: A project is monitored to determine whether the progress is proceeding according to budgeted plans and one of the aims is to determine the overall financial condition of the project. This could be accomplished by detecting quantitative variation at any given point in time, either for a specific activity or the entire project. One can accumulate cost data from a series of sources, usually related to manpower, materials, overhead and other changes compare the actual accumulated data for a particular activity or the entire project with the estimated cost. Analyze any difference variances and take such actions as curtailing resources devoted to a project on selecting alternative materials (Ullah et al., 2016).

The Effect of Effectively Utilization of Cost Control Measures

Recently in Nigeria, the use of effective cost control cannot be overemphasized. Not only does it affect the construction industries, it affects the whole economy of the nation. Construction firm in both public and private sectors of the Nigerian economy have inevitably been facing adverse economic conditions. The by-product of the adverse economic environment has been a considerable reduction in corporate profits.

For and effective cost control, the firm should have a definite plan of organization. Authority and responsibility of each executive should be clearly defining target for performance of work as well as the cost to be invited for the purpose should be laid down for each area of responsibility, so that responsibility maybe fixed for the deviation of actual cost from the predetermined cost.

The report should draw management's attention to exceptionally good or bad performance so that management by exception maybe carried out effectively. The aim should be to bring to light the factors leading to increase in cost rather than to punish people to take the remedial action to improve the performance in future.

For an effective cost control there should be effective budgetary control and there should be proper setting of standards (Darade & Udasi, 2018).

Importance of Cost Control of Capital Project in Nigeria.

The cost control is a process that should be continued through the construction period to ensure that the cost of the building is kept within the agreed cost limits. The cost control can be divided

into major areas: the control of cost during design stages and the control of cost by the contractors once the construction project has started.

According to Hwang et al., (2018) cost control of projects involves the measuring and collecting the cost record of a project and the work progress. It involves the comparison of actual progress with the planning.

Cost control in capital project is crucial for Nigeria's economic stability, attracting investments, ensuring project viability and fostering sustainable development. It plays a pivotal role in managing resources effectively, combating corruption, and contributing to the country's overall development goals. (Kumar, et al., 2015).

Ways of improving capital project execution which

1. Take Charge: As resources companies reconsider their engineering, procurement and construction models and assume greater control over the way they execute large capital project, they need to establish strong portfolio and project governance polices, and manage risk and uncertainty more efficiently.

2. Develop, Attract and Retain Talent: Companies need to define a workable model to recruit, develop, reward and retain the talent they need to deliver capital projects on time and within budget. This means balancing internal/external workloads during the project's lifecycle, which can extend for many years, from the earliest simulations to the execution phase. (Chigara et al., 2013).

3. Fully Integrate Systems and Processes: Given a capital projects often extensive and complex ecosystem of stakeholders, partners and suppliers, companies need to develop integrated information systems and processes. Better, more relevant and timelines data are crucial not only to enable operational readiness, they also play a key role in making a well-executed project possible. (Chigara et al., 2013).

4. Proper Risk Management: Often, project managers put safeguards in place for long-term risk. Short-term issues, however, often are left out of the equation. These issues can snowball quickly and start to have a real impact on the bottom line. Whether it's subcontractors that turn out to be unreliable, scheduling conflicts, or the changing tastes of stakeholders, any seemingly small issue could derail a project. Therefore, it's important to have contingency plans. Build some wiggle room into schedules, and make investments in programs like safety training to avoid any of those potential issues (Chigara et al., 2013).

5. Good Structure: Without clear goals, it's difficult to get things done in an efficient manner. A construction project can easily fall behind or run over budget (or both) if the companies don't have a clear target they need to hit. And without these goals, it's difficult to hold sub-contractors accountable for their part in a construction project. Performance management is a key aspect of project management (Chua et al., 2013).

6. Effective Communication: Communication is an important tool in any profession, but it's especially important when work is delegated amongst various parties. Without clear and effective communicating, important tasks can slip through the cracks and the team can remain unaware of an issue until it's too late to rectify (Chua et al., 2013).

7. Realistic Expectations/ Forecasting Effectively: Some clients and stakeholders may make some big asks. Whether they want a project completed on an accelerated schedule or on a limited budget,

there may be some challenges that come with their expectations. While some things are possible for a skilled project manager, some things simply are not. (Hwang et al., 2018).

Research Method

The research design used for this study is the descriptive survey design. After a thorough review of relevant literatures, data were collected through structured questionnaire from the sample considered to be the representative of the population through simple random purposive and stratified sampling techniques and these data were complemented by oral interview conducted among selected members of the sample. A sample size of 100 was chosen for this study which 80 questionnaires were administrated to respondent such as quantity surveyors, engineers, architects, builders, suppliers and supervisors etc. however, 70 completed questionnaires were returned. Data collected were analysed using frequency distribution and percentage and Relative Important Index statistical tool.

Validity: Validity is the extent to which the instruments used during the study measures the issues they are intended to measure. To ensure validity of data, a set of questions were designed to collect some information but with questions para-phrased differently. questionnaire was also piloted on 7 of selected professionals in construction industry the study area. In this case, care was taken to ensure that the selection of professionals in the sample is not biased

Table 1: Capital Projects Cost Are Not Effectively Controlled

Options	Frequency	Percent (%)
Strongl agreed	35	50.0
Agreed	28	40.0
Undecided	7	10.0
Disagreed	0	0
Strongly disagreed	0	0
Total	70	100.0

Source: field survey, 2025.

Table 1 shows the responses of respondents that capital projects costs are not effectively controlled. 35 of the respondents representing 50% strongly agree that capital projects costs are not effectively controlled, 28 of the respondents representing 40% percent equally agreed that capital projects costs are not effectively controlled, this may be due to the current situation of country economy. While 7 respondents representing 10.0 percent were undecided on the subject matter.

Table 2. There is a significant relationship between cost control measures and capital project execution in Nigeria

Option	Frequency	Percent (%)
strongly agree	28	40.0
Agree	42	60.0
Undecided	0	0
Disagree	0	0
strongly disagree	0	0
Total	70	100.0

Source: field survey, 2025.

Table 2 shows the responses of respondents that there is a significant relationship between cost control measures and capital project execution in Nigeria. 28 of the respondents representing 40% strongly agreed that there is a significant relationship between cost control measures and capital project execution in Nigeria.42 of the respondents representing 60% agreed that there is a significant relationship between cost control measures and capital project execution in Nigeria. This may be due to their knowledge of cost control measures and its positive effect on capital project execution.

Table 3. Categories of cost control measures considered most effective

Option	Frequency	Percent (%)
Predictive measures	26	37.5
Preventive measures	18	25.0
Corrective measures	11	15.0
Organizational measures	15	22.5
Total	70	100.0

Source: field survey, 2025.

Table 3 shows the responses of respondents on the cost control measures that can improve economic development in Nigeria, 26 respondents representing 37.5 percent preferred the Predictive measures as the most effective cost control measures, while 18 respondents representing 25.0 percent preferred the Preventive measures as the most effective cost control measures, 11 respondents representing 15.0 percent preferred Corrective measures as the most effective cost control measures, 15 respondents representing 22.5 preferred the Organizational measures as the most effective cost control measures.

Table 4: The effect of effectively utilization of cost control measures. Key (SA =5, A=4, UD=3, D=2, SD=1.

Effects	Frequency response					No	Total score	Mean Score	RII	Rank
	SA	A	UN	D	SD					
To gain the maximum profit within the designated period within budget	35	27	5	2	1	70	303	4.33	0.87	1
To keep the total expenditure within the amount agreed by client.	35	25	2	5	3	70	294	4.2	0.84	2
To give the building client good value for money of building	32	25	6	3	4	70	288	4.11	0.82	3
To achieve a balanced and logical distribution of the available funds between the various parts of the building	28	26	5	8	3	70	278	3.97	0.79	4
It enable new project to be estimated based on previous experience	17	21	11	15	7	70	239	3.41	0.68	5
Implementing cost control measures helps organizations stay within their budgetary limits.	10	20	13	15	12	40	211	3.01	0.60	6

Source: field survey, 2025

Table 4 shows the effect for effectively utilization of cost control measures. The highest ranked effect with the values of RII ≥0.80, regarded as an effect with very high level of effective utilization of control measures because the relative important index (RII) is greater than 0.8 was to gain the maximum profit within the period within budget which ranked highest with relative performance index (RII) of 0.86, this is because contactors are always eager to maximize profit. While to keep the total expenditure within the amount agreed by client having a relative performance index (RII) of 0.84 ranked second, although in most situations, it is not obtainable. To give the building client

good value for money of a building and to achieve a balanced and logical distribution of the available funds between the various parts of the building were ranked third and forth with RII of 0.82 and 0.76 respectively. It can be seen that, to gain the maximum profit within the designated period within budget is the most commonly effect for effectively utilization of cost control measures.

Conclusion

It is the resources well managed or mismanaged today that makes for tomorrows prosperity or depression. The economic depression we are now facing is more out of mismanagement of resources than lack of resources. The key to the success of our construction investment industry is professional management. There is urgent need for innovations in the management of our construction resources for a viable product as the relationship between inflation and cost of construction is directly proportional. However, in the type of economic environment x-rayed in the above chapters, the point has been made clear that the task before cost managers of the construction industry under such conditions is more difficult than in normal conditions. Nevertheless, it creates special challenges for managers of construction cost and/or industry to ensure the survival and structural strength of their organization. This can be achieved only through optimal use and management of construction resources.

Recommendation

In order to achieve the tremendous benefits of cost management as means of cost control, the cost manager must adhere strictly to the information contained in the overall programme chart and make changes where ever necessary and applying both his personal experience and intelligence at the same time. All other professionals, operatives and even the client should be capable of carrying out their own part of the task effectively and in time too. To this end and in line with the research questions stated earlier, I recommend the following solutions or strategies as a means for improving capital project management under the current economic situation in Nigeria.
Continuous Monitoring and Reporting: To avoid exceeding the budgeted cost, disputes and abandonment of capital project, the contractor should Implement a robust monitoring and reporting systems to track project costs in real-time. Regularly review and analyse the data to identify trends, variations, and areas for improvement.

Risk Management: The contractor should conduct thorough risk assessments at the beginning of the project and regularly revisit them throughout its lifecycle. Identify potential economic risks and develop mitigation strategies to address unforeseen challenges. Also, there should be collaboration with strategic partners and suppliers.

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